

VALIDATION DEVICES, SERVERS, VALIDATION METHODS, AND FILE MODIFICATION METHODS

FIELD OF INVENTION

[001] The present invention relates broadly, but not exclusively, to validation devices, servers, validation methods, and file modification methods.

BACKGROUND

[002] Transferring large files over a network is consuming a high amount of resources with respect to bandwidth, energy and time.

[003] A need therefore exists to provide methods and/or systems to address at least some of the above problems.

[004] In existing file transfer solutions, file contents may be validated at the destination system after the entire file is uploaded. This is wasteful for large files where it is only known whether the file is useful or not after the file is uploaded.

[005] In some systems, the file contents may be validated in the source system before the file is uploaded. This however may make the source system intelligent in the sense that the source system knows a lot more about the file being sent/ uploaded to be able to perform validations on its contents. This ties the file sender system to the type of files that it can validate and introduction to new kinds of file or changes to the existing file validation rules are difficult to provide in such a system.

SUMMARY

[006] According to ~~various embodiments~~a first aspect, a validation device may be provided. The validation device may include: a source information identification circuit configured to determine information relating to a source file; a source information transmitter configured to transmit the information relating to the source file to a server; a validation program receiver configured to receive a validation program from the server, the validation program being based on at least a geographic location of a destination of the source file; a validation circuit configured to execute the validation program to validate the source file and automatically remove invalid portions of the

source file by masking the invalid portions to generate a modified source file only including valid portions; and a source transmitter configured to transmit the modified source file if the validation circuit validates the source file, wherein the modified source file only including valid portions is transmitted, wherein the validation program comprises at least a machine-executable program and wherein the source transmitter transmits the modified source file after removal of the invalid portion of the source file.

[007] According to ~~various embodiments~~a second aspect, a server may be provided. The server may include: a source information identification circuit configured to determine information relating to a source file; a source information receiver configured to receive information relating to a source file on a validation device; a validation program determiner configured to determine a validation program based on the information; and a transmitter configured to transmit the validation program to the validation device, wherein the validation program comprises at least a machine-executable program, wherein the validation program is configured to automatically remove invalid portions of the source file to generate a modified source file only including valid portions, and wherein the validation program determiner is configured to determine the validation program based on at least a geographic location of a destination of the source file.

[008] According to ~~various embodiments~~a third aspect, a validation method may be provided. The validation method may include: determining information relating to a source file on a validation device; transmitting the information relating to the source file from the validation device to a server; transmitting a validation program based on the information relating to the source file from the server to the validation device; executing the validation program on the validation device to validate the source file; executing a validation program to automatically remove invalid portions of the source file by masking the invalid portions to generate a modified source file only including valid portion; and transmitting the modified source file only including the valid portions from the validation device after removal of the invalid portions if the validation program validates the source file, wherein the validation program comprises at least a machine-executable program, and wherein the validation program is determined based on at least a geographic location of a destination of the source file.

[009] According to various embodiments, a file modification method may be provided. The file modification method may include: determining a type of a source file on a device; transmitting information indicating the type of the source file from the device to a server; transmitting a program based on the information indicating the type of the source file from the server to the device; and executing the program on the device to remove inappropriate portions from the source file to generate a modified source file.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010] Embodiments and implementations are provided by way of example only, and will be better understood and readily apparent to one of ordinary skill in the art from the following written description, read in conjunction with the drawings, in which:

[0011] Figure 1A shows a validation device according to various embodiments;

[0012] Figure 1B shows a validation device according to various embodiments;

[0013] Figure 1C shows a server according to various embodiments;

[0014] Figure 1D shows a flow diagram illustrating a validation method according to various embodiments;

CLAIMS

1. A validation device comprising:
 - a source information identification circuit configured to determine information relating to a source file;
 - a source information transmitter configured to transmit the information relating to the source file to a server;
 - a validation program receiver configured to receive a validation program from the server, the validation program being based on at least a geographic location of a destination of the source file;
 - a validation circuit configured to execute the validation program to validate the source file and automatically remove invalid portions of the source file by masking the invalid portions to generate a modified source file only including valid portions; and
 - a source transmitter configured to transmit the modified source file if the validation circuit validates the source file, wherein the modified source file only including valid portions is transmitted,
wherein the validation program comprises at least a machine-executable program and wherein the source transmitter transmits the modified source file after removal of the invalid portion of the source file.
- ~~2. The validation device of claim 1,~~
~~wherein the validation circuit is further configured to execute the validation program to mark invalid portions of the source file.~~
- ~~3. The validation device of any one of claims 1 to 2,~~
~~wherein the validation circuit is further configured to execute the validation program to remove invalid portions of the source file.~~
- ~~42.~~ The validation device of ~~any one of claims 1 to 3,~~
 wherein the information relating to the source file comprises class information indicating a class of the source file.
- ~~53.~~ The validation device of claim ~~42,~~ further comprising:
 - a class determination program receiver configured to receive a class determination program from the server; and
 - a class determination circuit configured to execute the class determination program to determine the class of the source file.

~~6. The validation device of any one of claims 1 to 5,
wherein the validation program comprises at least one of an executable
program or a bytecode.~~

~~74.~~ A server comprising:
a source information identification circuit configured to determine information
relating to a source file;
a source information receiver configured to receive information relating to a
source file on a validation device;
a validation program determiner configured to determine a validation program
based on the information; and
a transmitter configured to transmit the validation program to the validation
device.

~~wherein the validation program comprises at least a machine-executable
program.~~

~~wherein the validation program is configured to automatically remove invalid
portions of the source file to generate a modified source file only including valid
portions, and~~

~~wherein the validation program determiner is configured to determine the
validation program based on at least a geographic location of a destination of the
source file..~~

~~8. The server of claim 7,
wherein the validation program determiner configured to determine the
validation program based on at least one of a destination of the source file, an origin of
the source file, a content of the source file, a data format of the source file, or a
purpose of the source file.~~

~~95.~~ The server of ~~any one of claims 74 to 8,~~
wherein the validation program is configured to validate the source file on the
validation device.

~~10. The server of any one of claims 7 to 9,
wherein the validation program is configured to mark invalid portions of the
source file.~~

~~11. The server of any one of claims 7 to 10,
wherein the validation program is configured to remove invalid portions of the
source file.~~

~~126.~~ The server of ~~any one of claims 7 to 114~~,
wherein the information relating to the source file comprises class information
indicating a class of the source file.

~~13. The server of any one of claims 7 to 12,
wherein the validation program comprises at least one of an executable
program or a bytecode.~~

~~147.~~ A validation method comprising:
determining information relating to a source file on a validation device;
transmitting the information relating to the source file from the validation device
to a server;
transmitting a validation program based on the information relating to the
source file from the server to the validation device;
executing the validation program on the validation device to validate the source
file;

executing the validation program to automatically remove invalid portions of the
source file by masking the invalid portions to generate a modified source file only
including valid portions; and

transmitting the modified source file only including the valid portions from the
validation device after removal of the invalid portions if the validation program validates
the source file.

wherein the validation program comprises at least a machine-executable
program, and

wherein the validation program is determined based on at least a geographic
location of a destination of the source file.

~~15. The validation method of claim 14,
wherein the validation program is determined based on at least one of a
destination of the source file, an origin of the source file, a content of the source file, a
data format of the source file, or a purpose of the source file.~~

~~16. The validation method of any one of claims 14 to 15,~~

~~wherein the validation program is configured to mark invalid portions of the source file.~~

~~17. The validation method of any one of claims 14 to 16,
wherein the validation program is configured to remove invalid portions of the source file.~~

~~188.~~ The validation method of ~~any one of claims 147 to 17,~~
wherein the information relating to the source file comprises class information indicating a class of the source file.

~~199.~~ The validation method of claim ~~188,~~ further comprising:
transmitting a class determination program from the server; and
executing the class determination program to determine the class of the source file.

~~20. A file modification method comprising:
determining a type of a source file on a device;
transmitting information indicating the type of the source file from the device to a server;
transmitting a program based on the information indicating the type of the source file from the server to the device; and
executing the program on the device to remove inappropriate portions from the source file to generate a modified source file.~~